

MANAGEMENT MEMO

SUBJECT:

ENERGY MANAGEMENT IN STATE FACILITIES DURING WINTERTIME ELECTRICAL EMERGENCIES

REFERENCES:

Supplemental to Energy Management Memos 99-13 and 00-06

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00-13

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EXPIRES:

Until Superseded

ISSUING AGENCY:

DEPARTMENT OF GENERAL SERVICES

The State of California is facing an unprecedented period of electricity shortages during the current winter months. In order to help alleviate this situation and ensure the continued operation of all State facilities with a minimum of disruption, all state agencies and departments will follow this energy conservation policy in all buildings they own, control, or operate. These energy conservation protocols are in addition to the routine energy conservation measures set forth in Management Memos 99-13 and 00-06.

In the event of a wintertime **Stage 2 or 3 Electrical Emergency** as defined below, all state agencies and departments will follow this emergency energy conservation plan in all buildings they own, control, or operate.

Special service needs, such as those found in medical facilities, special equipment such as mainframe computers, essential operations that require operations after normal business hours, or regulatory requirements may require exemptions to these general guidelines. Even in such situations, conscientious management practices still can reduce energy consumption.

ELECTRICAL EMERGENCY

During periods in which electrical demand puts strains on the electric systems of the state's utilities, the California Independent System Operator (ISO) may declare an Electrical Emergency. Such a declaration can be made in progressive stages, depending upon the amount of reserve generation available to the California electrical grid. These stages are summarized here:

ISO Notice*	Condition
ALERT	Less than 7% operating reserve forecasted in DAY AHEAD market.
WARNING	Less than 7% operating reserve forecasted in HOUR AHEAD market.
EMERGENCY Stage 1	Emergency: Less than 7% operating reserves forecasted in REAL TIME. Customers with voluntary interruptible contracts should prepare for <i>potential</i> interruption.
EMERGENCY Stage 2	Emergency: Less than 5% operating reserves forecasted in REAL TIME. An interruption is in effect for voluntary interruptible loads

	only.
EMERGENCY Stage 3	Less than 1½% operating reserves forecasted in REAL TIME. All available interruptible load is called for interruption. Firm service customers (customers not on interruptible tariff) will also be called for interruption.
<i>* The ISO can issue any notice at any time (i.e., notices do not necessarily occur sequentially but will be issued in response to system conditions). Interruptions can occur at any time but usually would occur during the afternoon peak hours (noon to six p.m.)</i>	

Wintertime electrical demand is strongly dependent upon heating and lighting loads. Unlike summer when the peak period occurs during afternoon daylight hours, the winter electricity demand peak typically occurs in the late afternoon or early evening, generally between 5:00 and 6:00 PM. Facility managers shall anticipate taking steps to reduce loads in state buildings as described below.

When the ISO issues notice of a Stage 2 or Stage 3 Emergency, the following guidelines shall apply:

HOURS OF OPERATION

- For all normal business operations, the hours of business will be 6:00 AM (06:00 hours) through 5:30 PM (17:30 hours); all non-essential lighting and other electrical loads shall be minimized during non-business hours. Agencies are expected to make a reasonable determination as to what critical functions must continue outside of these hours.

BUILDING HEATING AND COOLING SYSTEMS

- Interior air shall not be heated above 70 degrees F. unless such a temperature in a particular job or occupation may expose employees to a particular health and safety risk. Consider dressing warmly in anticipation of decreasing office temperatures.
- Building temperatures shall be allowed to fluctuate within an acceptable range in order to avoid wasteful over-control patterns. Simultaneous or alternate heating and cooling operations to maintain an exact temperature in work areas shall be avoided. This range may vary with each building's control system; the target range is plus or minus four degrees F. from the temperature set-point, for a total fluctuation of eight degrees F.
- Windows and doors will be kept closed to prevent loss of heated air.
- Whenever possible, building operators shall operate and adjust controls to get optimum advantage from outside temperatures for meeting cooling demand (e.g., using outside air economizers). Avoid operating chillers and compressors.
- Portable electric devices (e.g., microwaves, toaster ovens, and heaters) shall not be used in state facilities without the express permission of the facility energy manager.

- Domestic hot water temperatures shall not be set above 105 degrees F. Building operators and tenants shall take every opportunity to minimize hot water usage.¹
- Blinds and window coverings on all south- and west-facing windows shall be opened to make use of solar heat gain to warm the buildings, if needed.

LIGHTING

- All lights shall be turned off in unoccupied rooms at all times. If installed, occupancy sensors shall be enabled.
- Overhead lighting shall be reduced as much as possible without creating unsafe conditions or interfering with the performance of duties. Such reduction can be achieved by operating half-bank switches, where installed, by using task lighting, or by relying on daylighting where feasible and where this does not result in additional direct solar gain into the building.
- Custodial personnel shall turn lights on only as needed for custodial work and turn lights off when their work is done. Where possible, custodial personnel shall work in teams to complete cleaning on each floor of multi-story buildings before turning on lights on another floor.
- Security and safety lighting shall be held to the lowest acceptable levels. Decorative lighting, inside or outside, shall be switched off.

OTHER REDUCTIONS IN ELECTRICAL DEMAND

- All video monitors and personal computers shall be set for automatic power-down ("sleep") mode after five minutes of non-operation. (All Energy Star monitors should have this feature available and can be turned on using the "Display" option of the desktop "Control Panel.") Note that the installation of screen savers by itself does not reduce power consumption and is not a substitute.
- All copiers and printers that have an automatic power-down or "Energy Saver" feature shall have this feature enabled.
- All non-essential personal computers, printers, copiers and other electrical equipment shall be turned off outside of normal business hours (6:00 AM through 5:30 PM) and when not in use, unless there is a specific and essential need for after-hours operation.

¹ Facility managers concerned with the possibility of problems associated with Legionella bacteria (i.e., "Legionnaires' Disease") in their water systems should investigate maintenance and water treatment options to control this bacteria. Please note that simply elevating hot water temperatures alone will not control Legionella unless system temperatures are maintained at 132 degrees F or higher, which creates a high danger of scalding.

- During normal business hours, use of photocopiers and printers shall be consolidated. Where possible, redundant printers and copiers shall be turned off and work shall be directed to nearby machines. Major copy and print jobs (i.e., over 20 pages) shall be deferred whenever possible.
- Unplug refrigerated water coolers and drinking fountains, where feasible.
- Use of break room electrical appliances (e.g., microwaves, toaster ovens, and coffee machines) should be discontinued.

OPERATION OF ONSITE GENERATION EQUIPMENT

- State facilities that have cogeneration or distributed generation equipment should be prepared to staff and operate this equipment, if it is not operating in the normal course of business, upon instructions from the Department of General Services. This specifically refers to equipment that (a) has a current operating permit from the local Air Quality Management District and any other interconnection and/or operating permits normally required and (b) has trained operating personnel available to run it. **Emergency generation equipment is not included in this directive.**
- Upon direction from DGS in response to requests from the CAISO, State facilities will operate their generation equipment, as described above, to provide support to the grid.
- State facilities that have licensed cogeneration or distributed generation equipment that is not available for operation shall take all prudent steps to ready this equipment for operation, as above. DGS Office of Energy Assessments is available for consultation on accomplishing this directive.

Advice or consultation on this Management Memo as well as answers to technical questions or other questions regarding this policy, including funding sources available for project implementation, may be obtained from departmental energy managers or by contacting Douglas M. Grandy, Chief, Office of Energy Assessments, 717 K Street, Suite 409, Sacramento, CA 95814. Phone: (916) 323-8777, FAX: (916) 327-7316, E-mail Doug.Grandy@dgs.ca.gov

The Department of General Services will contact state agencies to advise them of ISO alerts, warnings, and emergencies. During extreme weather conditions, state agency facility managers should watch for ISO notices through the local news media as well.



BARRY D. KEENE, Director
Department of General Services

Addendum to Supplemental Energy Management Memo # 00-13**Obtaining Information from the California Independent System Operator
and Electric Utilities**

The California Independent System Operator is an independent corporation created by the State to plan and control the transmission grid. For additional information regarding electrical emergencies, please refer to the ISO's "PowerWatch 2000" website at:
<http://www.caiso.com/newsroom/pw2000.html>

Other sources of information are the websites of the major California utilities, listed below. ***Note that the utilities are to take direction from the ISO in the event of system emergencies and may not have the most current information on websites.***

Pacific Gas and Electric Company	http://www.pge.com/toc/bus_seaso_13.html http://www.pge.com/customer_services/emergency/
Southern California Edison Company	http://www.sce.com/safetysca/index_sf.htm http://www.sce.com/quicksca/index_qu.htm
San Diego Gas & Electric Company	http://www.sdge.com/ http://www.sdge.com/aboutus/newsroom/
Sacramento Municipal Utility District	http://www.smud.org/ http://www.smud.org/info/news.html
Los Angeles Department of Water and Power	http://www.ladwp.com/home.htm http://www.ladwp.com/whatnew/dwpnews/dwpcrtoc.htm